

Serial No. 09/760,883

**IN THE CLAIMS:**

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 10, 14, 19, 27 and 35-39 and ADD new claims 53-61 in accordance with the following:

1. (CURRENTLY AMENDED) A driving method for a plasma display apparatus, wherein a frequency of a clock signal, used to drive a display panel, is continuously varied to reduce a noise output of the display panel, and said display panel is driven with said frequency varying clock signal.
2. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 1, wherein said clock signal used to drive said display panel is a source clock signal of said display apparatus.
3. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 1, wherein the frequency of said clock signal used to drive said display panel continuously varies within a range of plus or minus 1 percent of a reference frequency.
4. (CANCELED)
5. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 1, wherein a control of said clock signal used to drive said display panel is performed during a quiescent period.
6. (PREVIOUSLY PRESENTED) A driving method for a plasma display apparatus having a display panel, wherein a peak noise output of the display panel is reduced by switching a clock signal, used to drive the display panel, between at least two frequencies in accordance with time conditions.
7. (PREVIOUSLY PRESENTED) A driving method for a display apparatus having a

Serial No. 09/760,883

display panel, wherein a peak noise output of the display panel is reduced by sequentially switching a clock signal, used to drive the display panel, between at least two frequencies, two frequencies lying within plus or minus 1 percent of a reference frequency being set for said clock signal used to drive said display panel.

8. (CANCELED)

9. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 6, wherein a control of said clock signal used to drive said display panel is performed during a quiescent period.

10. (CURRENTLY AMENDED) A driving method for a plasma display apparatus, wherein drive waveforms for a display panel are provided corresponding to at least two frequencies, and said display panel is driven by sequential time switching of an output drive waveform between said drive waveforms corresponding to said at least two frequencies in accordance with time conditions to reduce a noise output of the display panel.

11. (PREVIOUSLY PRESENTED) A driving method for a display apparatus, wherein drive waveforms for a display panel are provided corresponding to at least two frequencies, and said display panel is driven by sequentially switching an output drive waveform between said drive waveforms corresponding to said at least two frequencies, said drive waveforms for said display panel corresponding to two frequencies lying within plus or minus 1 percent of a reference frequency.

12. (CANCELED)

13. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 10, wherein a control of said clock signal used to drive said display panel is performed during a quiescent period.

14. (CURRENTLY AMENDED) A plasma display apparatus, comprising:  
a clock generating circuit;  
a drive waveform generating circuit generating a drive waveform by using a clock signal from said clock generating circuit having a continuously varying frequency; and

Serial No. 09/760,883

a display panel displaying an image in accordance with said drive waveform, wherein said drive waveform generating circuit drives said display panel by outputting the drive waveform having a varying frequency in accordance with said frequency varying clock signal to reduce a noise output of the display panel.

15. (PREVIOUSLY PRESENTED) The plasma display apparatus as claimed in claim 14, wherein said clock generating circuit generates a source clock signal of said display apparatus.

16. (PREVIOUSLY PRESENTED) The plasma display apparatus as claimed in claim 14, wherein said clock signal whose frequency varies continuously is within a range of plus or minus 1 percent of a reference frequency.

17. (CANCELED)

18. (PREVIOUSLY PRESENTED) The plasma display apparatus as claimed in claim 14, wherein during a quiescent period, said clock generating circuit performs a control of said clock signal used to drive said display panel.

19. (CURRENTLY AMENDED) A plasma display apparatus, comprising;  
a clock generating circuit;  
a drive waveform generating circuit generating a drive waveform by using a clock signal from said clock generating circuit having a switched frequency switched between at least two frequencies in accordance with time conditions; and  
a display panel displaying an image in accordance with said drive waveform, wherein said drive waveform generating circuit drives said display panel by outputting the drive waveform having a switched frequency in accordance with said switched clock signal to reduce a noise output of the display panel.

20. (PREVIOUSLY PRESENTED) A display apparatus, comprising;  
a clock generating circuit;  
a drive waveform generating circuit generating a drive waveform by using a clock signal from said clock generating circuit having a sequentially switched frequency switched between at least two frequencies; and

Serial No. 09/760,883

a display panel displaying an image in accordance with said drive waveform, wherein said drive waveform generating circuit drives said display panel by outputting the drive waveform having a switched frequency in accordance with said sequentially switched clock signal, wherein said clock signal sequentially switched between two frequencies is within plus or minus 1 percent of a reference frequency.

21. (CANCELED)

22. (PREVIOUSLY PRESENTED) The plasma display apparatus as claimed in claim 19, wherein during a quiescent period, said clock generating circuit performs a control of said clock signal used to drive said display panel.

23. (PREVIOUSLY PRESENTED) A plasma display apparatus, comprising;  
a clock generating circuit;  
a drive waveform generating circuit generating a drive waveform by using a clock signal from said clock generating circuit having a time switched frequency switched between at least two frequencies in accordance with time conditions; and  
a display panel displaying an image in accordance with said drive waveform, wherein said drive waveform generating circuit drives said display panel by sequential time switching of an output drive waveform between drive waveforms corresponding to the at least two frequencies.

24. (PREVIOUSLY PRESENTED) A display apparatus, comprising;  
a clock generating circuit;  
a drive waveform generating circuit generating a drive waveform by using a clock signal from said clock generating circuit having a sequentially switched frequency switched between at least two frequencies; and  
a display panel displaying an image in accordance with said drive waveform, wherein said drive waveform generating circuit drives said display panel by sequentially switching an output drive waveform between drive waveforms corresponding to at least two frequencies, wherein said drive waveform generating circuit sequentially switches said output drive waveform between drive waveforms corresponding to two frequencies lying within plus or minus 1 percent of a reference frequency.

Serial No. 09/760,883

25. (CANCELED)

26. (PREVIOUSLY PRESENTED) The plasma display apparatus as claimed in claim 23, wherein during a quiescent period, said clock generating circuit performs a control of said clock signal used to drive said display panel.

27. (CURRENTLY AMENDED) A driving method for a plasma display apparatus, comprising:  
continuously varying a frequency of a clock signal; and  
driving a display panel with said continuously varying frequency clock signal to reduce a noise output of the display panel.

28. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 27, further comprising:  
using the continuously varying frequency clock signal as a source clock signal of said display apparatus.

29. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 27, wherein the continuous varying of the frequency of the clock signal is within a range of plus or minus 1 percent of a reference frequency.

30. (CANCELED)

31. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 27, further comprising:  
performing a control of said clock signal used to drive said display panel during a quiescent period.

32. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 27, wherein said driving of the display panel reduces peak values of noise emitted by the display panel.

33. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 27, wherein said driving of the display panel spreads out frequencies of

Serial No. 09/760,883

noise emitted by the display panel.

34. (PREVIOUSLY PRESENTED) A driving method for a plasma display apparatus, comprising:

switching a clock signal between at least two frequencies in accordance with time conditions; and

driving a display panel by with said switched clock signal to reduce peak values of noise emitted by the display panel.

35. (CURRENTLY AMENDED) A driving method for a plasma display apparatus, comprising:

providing drive waveforms for a display panel corresponding to a plurality of frequencies;

switching an output drive waveform between said drive waveforms corresponding to said plurality of frequencies in accordance with time conditions; and

driving said display panel by said drive waveforms corresponding to said plurality of frequencies to reduce a noise output of the display panel.

36. (CURRENTLY AMENDED) A plasma display apparatus including a display panel to display an image, comprising:

a clock generating circuit to generate a clock signal having a continuously varying frequency; and

a drive waveform generating circuit generating a drive waveform having a frequency varying in accordance with said frequency varying clock signal and driving the display panel in accordance with the generated drive waveform to reduce a noise output of the display panel.

37. (CURRENTLY AMENDED) A plasma display apparatus including a display panel to display an image comprising:

a clock generating circuit to generate a clock signal based on a spread-type clock oscillator; and

a drive waveform generating circuit generating a drive waveform having a frequency varying in accordance with the generated clock signal and driving the display panel in accordance with the generated drive waveform to reduce a noise output of the display panel.

38. (CURRENTLY AMENDED) A plasma display apparatus including a display panel

Serial No. 09/760,883

to display an image, comprising:

a clock generating circuit to generate a clock signal switched between a plurality of frequencies in accordance with time conditions;

a drive waveform generating circuit generating a drive waveform having a frequency switched in accordance with said switched clock signal and driving the display panel in accordance with the generated drive waveform to reduce a noise output of the display panel.

39. (CURRENTLY AMENDED) A plasma display apparatus including a plasma display panel to display an image, comprising:

a clock generating circuit; and

a drive waveform generating circuit generating a drive waveform by switching an output drive waveform between drive waveforms corresponding to a plurality of frequencies in accordance with time conditions, and driving the display panel in accordance with the generated drive waveform to reduce a noise output of the display panel.

40. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 6, wherein the switching of the clock signal between the at least two frequencies in accordance with the time conditions comprises:

periodically switching the clock signal to reduce the peak noise output of the display panel.

41. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 10, wherein the time switching of the output drive waveform between said drive waveforms corresponding to said at least two frequencies in accordance with the time conditions comprises:

periodically switching the output drive waveform between said drive waveforms corresponding to said at least two frequencies to reduce the peak noise output of the display panel.

42. (PREVIOUSLY PRESENTED) The plasma display apparatus as claimed in claim 19, wherein the clock signal switched between said at least two frequencies in accordance with the time conditions is periodically switched between said at least two frequencies to reduce the peak noise output of the display panel.

Serial No. 09/760,883

43. (PREVIOUSLY PRESENTED) The plasma display apparatus as claimed in claim 23, wherein the clock signal time switched between said at least two frequencies in accordance with the time conditions is periodically time switched between said at least two frequencies to reduce the peak noise output of the display panel.

44. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 34, wherein the switching of the clock signal between said at least two frequencies in accordance with the time conditions comprises:

periodically switching the clock signal between said at least two frequencies to reduce the peak noise output of the display panel.

45. (PREVIOUSLY PRESENTED) The driving method for a plasma display apparatus as claimed in claim 35, wherein the switching of the output drive waveform between said drive waveforms corresponding to said plurality of frequencies in accordance with the time conditions comprises:

periodically switching the output drive waveform between said drive waveforms corresponding to said plurality of frequencies to reduce the peak noise output of the display panel.

46. (PREVIOUSLY PRESENTED) The plasma display apparatus as claimed in claim 36, wherein the clock signal switched between the plurality of frequencies in accordance with the time conditions is periodically switched between the plurality of frequencies to reduce the peak noise output of the display panel.

47. (PREVIOUSLY PRESENTED) The plasma display apparatus as claimed in claim 23, wherein the output drive waveform switched between the drive waveforms corresponding to the plurality of frequencies in accordance with time conditions is periodically switched between the plurality of frequencies to reduce the peak noise output of the display panel.

48. (PREVIOUSLY PRESENTED) A driving method for a display apparatus, wherein a frequency of a clock signal, used to drive a display panel, is continuously varied within a range of plus or minus 1 percent of a reference frequency, and said display panel is driven with said frequency varying clock signal.



Serial No. 09/760,883

49. (PREVIOUSLY PRESENTED) A display apparatus, comprising:  
a clock generating circuit;  
a drive waveform generating circuit generating a drive waveform by using a clock signal from said clock generating circuit having a continuously varying frequency varied within a range of plus or minus 1 percent of a reference frequency; and  
a display panel displaying an image in accordance with said drive waveform, wherein said drive waveform generating circuit drives said display panel by outputting the drive waveform having a varying frequency in accordance with said frequency varying clock signal.

50. (PREVIOUSLY PRESENTED) A driving method for a display apparatus, comprising:  
continuously varying a frequency of a clock signal within a range of plus or minus 1 percent of a reference frequency; and  
driving a display panel with said continuously varying frequency clock signal.

51. (PREVIOUSLY PRESENTED) A display apparatus including a display panel to display an image, comprising:  
a clock generating circuit to generate a clock signal having a continuously varying frequency varied within a range of plus or minus 1 percent of a reference frequency; and  
a drive waveform generating circuit generating a drive waveform having a frequency varying in accordance with said frequency varying clock signal and driving the display panel in accordance with the generated drive waveform.

52. (PREVIOUSLY PRESENTED) A display apparatus including a display panel to display an image comprising:  
a clock generating circuit to generate a clock signal within a range of plus or minus 1 percent of a reference frequency based on a spread-type clock oscillator; and  
a drive waveform generating circuit generating a drive waveform having a frequency varying in accordance with the generated clock signal and driving the display panel in accordance with the generated drive waveform.

Serial No. 09/760,883

53. (NEW) A driving method for a plasma display apparatus having a display panel, comprising

applying a drive signal having a rectangular shape to each electrode of said panel so as to display with emission, wherein a peak noise output of the display panel is reduced by switching a clock signal, among at least two frequencies sequentially, and by generating the drive signal from the switched clock signal.

54. (NEW) A driving method for a plasma display apparatus,

wherein a drive signal having a rectangular shape is applied to each electrode of said panel so as to display with emission,

wherein drive waveforms for a display panel are provided corresponding to at least two frequencies, and said display panel is driven by sequential time switching of an output drive waveform between said drive waveforms corresponding to said at least two frequencies in accordance with time conditions.

55. (NEW) A plasma display apparatus, comprising;

a clock generating circuit;

wherein a drive signal having a rectangular shape is applied to each electrode of said panel so as to display with emission,

a drive waveform generating circuit generating a drive waveform by using a clock signal from said clock generating circuit having a switched frequency switched between at least two frequencies in accordance with time conditions; and

a display panel displaying an image in accordance with said drive waveform, wherein said drive waveform generating circuit drives said display panel by outputting the drive waveform having a switched frequency in accordance with said switched clock signal.

56. (NEW) A plasma display apparatus, comprising;

a clock generating circuit;

wherein a drive signal having a rectangular shape is applied to each electrode of said panel so as to display with emission,

a drive waveform generating circuit generating a drive waveform by using a clock signal from said clock generating circuit having a time switched frequency switched between at least two frequencies in accordance with time conditions; and

a display panel displaying an image in accordance with said drive waveform, wherein

Serial No. 09/780,883

said drive waveform generating circuit drives said display panel by sequential time switching of an output drive waveform between drive waveforms corresponding to the at least two frequencies.

56. (NEW) A driving method for a plasma display apparatus, comprising:  
switching a clock signal between at least two frequencies in accordance with time conditions; and  
driving a display panel by with said switched clock signal to reduce peak values of noise emitted by the display panel, and  
wherein a drive signal having a rectangular shape is applied to each electrode of said panel so as to display with emission.

57. (NEW) A driving method for a plasma display apparatus, comprising:  
providing drive waveforms for a display panel corresponding to a plurality of frequencies;  
wherein a drive signal having a rectangular shape is applied to each electrode of said panel so as to display with emission,  
switching an output drive waveform between said drive waveforms corresponding to said plurality of frequencies in accordance with time conditions; and  
driving said display panel by said drive waveforms corresponding to said plurality of frequencies.

58. (NEW) A plasma display apparatus including a display panel to display an image, comprising:  
a clock generating circuit to generate a clock signal switched between a plurality of frequencies in accordance with time conditions;  
wherein a drive signal having a rectangular shape is applied to each electrode of said panel so as to display with emission,  
a drive waveform generating circuit generating a drive waveform having a frequency switched in accordance with said switched clock signal and driving the display panel in accordance with the generated drive waveform.

59. (NEW) A plasma display apparatus including a plasma display panel to display an image, comprising:  
a clock generating circuit; and

Serial No. 09/760,883

wherein a drive signal having a rectangular shape is applied to each electrode of said panel so as to display with emission,

a drive waveform generating circuit generating a drive waveform by switching an output drive waveform between drive waveforms corresponding to a plurality of frequencies in accordance with time conditions, and driving the display panel in accordance with the generated drive waveform.

60. (NEW) A plasma display apparatus having a display panel, comprising;  
a display data control unit which controls input display data according to a first clock; and  
a drive control unit which generates a drive signal having a rectangular shape according to a second clock, the drive signal being applied to each electrode of the display panel when displaying with emission,

wherein frequencies of the first and second clocks vary continuously with time.

61. (NEW) A plasma display apparatus having a display panel according to claim 60, wherein the first and second clocks are identical clocks.